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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/235,531 01/22/99 BIEBER

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STRIKER STRIKER & STENBY
103 EAST NECK ROAD
HUNTINGTON NY 11743

QM12/0810

EXAMINER

ERGENBRIGHT, E

ART UNIT

PAPER NUMBER

3722

DATE MAILED:

08/10/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/235,531

Applicant(s)
Bieber et al.

Examiner
Erica Ergenbright

Group Art Unit
3722



☒ Responsive to communication(s) filed on Jun 5, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-7 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-7 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2, 5, & 8

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Faxing of Responses to Office Actions

1. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 305-3579. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

Claim Objections

2. Claims 2-7 are objected to because of the following informalities: in line 1 of each of claims 2-7, "hand-guide" should be --hand-guided--; in claim 2, line 3, --are-- should be inserted after "said claws". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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There are several positively recited limitations that lack sufficient antecedent bases in the claims. Examples of these are: “the torque transmission” in claim 1, line 15; “said arresting coupling” in claim 2, line 2, claim 3, line 2, and claim 5, line 2; “said intermediate disc” in claim 5, line 3; and “said toothed gear” in claim 7, line 2.

In claim 1, line 16, it is unclear what direction is meant by “an opposite direction”.

In claim 1, lines 13-16, there is no claimed structure to support the function of the arresting device “automatically opening” and “automatically closing”.

In claim 2, it is unclear what constitutes the “end side” of a gear.

In claims 2 and 5, there is no axis claimed for determining what is meant by “axial” or “radially”.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-3, 5, and 7, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,984,022 (Harman, Jr. et al.). Harman teaches a drill (column 4, lines 1-2) having a housing 12. Within the housing 12 is a motor 14

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which transmits power through a geared drive mechanism 18 to a chuck 16 (column 4, lines 7-11 and Figure 1). The chuck 16 is drivingly connected to an output shaft 64 or “spindle” (column 4, lines 19-22), where a thread is known to be included by “drivingly connected”. As shown in Figure 1, the chuck 16 is loosened or tightened with a key, and thus a moment is imparted to the spindle 64 upon loosening or tightening the chuck 16. The drill has an “arresting device” or automatic shaft lock, which will be further described. Forming a portion of the arresting device is a shaft 60, which is an intermediate shaft. On intermediate shaft 60 is mounted a gear 32 which is coupled to axially-extending drive lugs or claws 42 (column 4, lines 32-35, and Figures 2 and 3). The gear 32 can be considered to be part of a transmissions stage, as motion is transmitted from the motor 18 to the spindle 64 via a series of gears which includes gear 32. Adjacent the gear 32 and claws 42 is an anvil or disc 48 which has a plurality of radially-projecting elements (see Figure 2). The disc 48 is press-fit so as to be non-rotatably mounted on intermediate shaft 60 (column 4, lines 39-40). The arresting device serves to lock the intermediate shaft 60 and the output shaft 64 from rotation upon an external torque is applied to the chuck 16 or output shaft 64 (column 6, lines 10-19), and to allow rotation of the intermediate and output shafts when a torque is applied from the motor 14 (column 6, lines 19-31).

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7. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-5 and 7, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,081,704 (Vassos et al.) in view of U.S. Patent No. 5,788,021 (Tsai). Vassos et al. teaches a drill (column 1, line 10) which has a housing 10, 11 (column 2, lines 22-23). The housing houses a motor 18 (column 2, lines 28-37, and Figure 1) which drives a spindle 20. A chuck 21 for holding a tool threads onto threaded stud 80 of spindle 20 (column 3, lines 66-68, and Figure 3). Thus, the spindle 20 receives a moment during exchanging of the tool holder, and, as viewed in Figure 1, a key is required to loosen or tighten the chuck 21. Such a loosening or tightening of the chuck 21 would also transmit a moment to the spindle. A "stage" of reduction gears is provided (see Figure 1), which gears provide a negative transmission ratio (column 5, lines 3-6). Output shaft 48 (see Figure 3) constitutes an "intermediate shaft". There are many "components" which are connected to the housing (see Figures 1 and 3). Vassos et al.

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does not teach an arresting device. Tsai teaches an automatic output shaft locking mechanism for an electric tool such as a drill or a striking tool (column 1, lines 7-23). Tsai's device utilizes a retaining ring 50, which constitutes a "disc". The "disc" 50 has a plurality of radial projections 502 (Figure 2), which project outwardly from center hole 501 (see Figure 1). The center hole 501 constitutes a bearing seat which couples disc 50 to shaft 60. Tsai also teaches the use of a "claw coupling" 20 which has a plurality of axially extending claws 203 (see Figure 1). Tsai's inner shaft 10 constitutes the "intermediate shaft", and the outer shaft 60 constitutes an output shaft or spindle shaft. When a torque is applied to the inner or intermediate shaft 10 (e.g., via the motor), the outer or output shaft 60 rotates (column 3, lines 28-35, and Figures 3 and 4). When a torque is applied to the output shaft 60 (e.g., manually), the disc 50 is locked in position (column 3, lines 35-60 and Figures 5 and 6) such that a chuck or a drill bit can be speedily and conveniently replaced (column 3, lines 60-64). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have added the automatic output shaft locking mechanism taught by Tsai to the drill taught by Vassos et al. (such that the intermediate shaft 48 taught by Vassos acts as the inner shaft 10 taught by Tsai, thus positioning the locking mechanism at an "end side" of a toothed gear of the stage taught by Vassos et al.), for the purpose of allowing drill bits to be speedily and conveniently removed or replaced (Tsai, column 3, lines 60-64).

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10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,081,704 (Vassos et al.) in view of U.S. Patent No. 5,788,021 (Tsai) as applied to claims 1 and 5 above, and further in view of U.S. Patent No. 3,030,818 (Zagar). Vassos et al. in view of Tsai teaches all aspects of the invention as claimed in claim 6 as set forth in the above 103 rejection based thereon, but teaches that the shaft 48 has a cylindrical cross section (see Figure 3 of Vassos et al.) rather than a non-cylindrical cross section. Zagar teaches the use of a gear 21, which is a driven disc. The gear 21 is mounted on a polygonal portion of a shaft 27 (Figures 1 and 3). The polygonally-mounted portion acts as a key coupling (column 1, lines 18-21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the shape of the intermediate shaft of Vassos et al in view of Tsai such that the portion of the shaft that held the disc was polygonally-shaped for the purpose of providing a built-in key between the disc and the shaft, thus preventing slippage between the disc and the shaft.

Prior Art References

11. The prior art references listed in the attached PTO-892, but not used in a rejection of the claims, are considered pertinent to applicant's disclosure. U.S. Patent No. 3,433,082 discloses a geared transmission for a hammer drill. U.S. Patent No. 1,915,542 teaches teeth engaging a gear. U.S. Patent No. 3,517,574 teaches a two-speed drive for a drill. U.S. Patent No.'s 3,021,723, 3,436,994, and 4,706,791 teach various motion stopping devices.

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Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica Ergenbright whose telephone number is (703) 308-6395. The examiner can normally be reached on Monday through Thursday from 7:30 a.m. to 5:00 p.m, and every other Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached at (703) 308-2159. The fax number for TC 3700 is (703) 305-3579. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 3700 receptionist whose telephone number is (703) 308-1148.

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EE

August 7, 2000

A.L. Wellington
A. L. WELLINGTON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700